What is Claimed Is:

1. A method of screening candidate substrates of the OCT6 transporter comprising:

a. providing a test agent;

b. providing a mammalian cell line which expresses OCT6

c. incubating the test agent with the cell line; and

d. determining whether the test agent is a substrate for OCT6.

2. The method of claim 1 wherein the test agent is coupled to a detectable substance.

3. The method of claim 2 wherein the detectable substance is selected from the group consisting of extrinsically activatable enzymes, prosthetic groups, fluorescent materials, luminescent materials, bioluminescent materials, radioactive materials, positron emitting metals using various positron emission tomographies, nonradioactive paramagnetic metal ions, immunogenic tag peptide sequences, extrinsically activatable toxins, extrinsically activatable quenching agents, and antibodies.

4. The method of claim 1 wherein the step of determining whether the test agent is a substrate for OCT6 comprises analyzing whether the test compound is located intracellularly.

5. A method of screening for potential anti-leukemia agents, comprising the steps of:

a. determining viability of a mammalian cell line which expresses OCT6 incubated in the presence of a test compound;

b. identifying the test compound as a potential anti-leukemia agent if the OCT6 intakes the test compound and the test compound causes cell death in the mammalian cell line which expresses OCT6.

6. The method of claim 5 wherein the viability of the OCT6 cell line is determined by applying a dye to the cells, incorporation of the dye by the cells indicating death of the cells.

7. The method of claim 6 wherein the dye is trypan blue.

8. A test kit for determining whether a substance is a substrate for an OCT6 transporter protein comprising:

a. a mammalian cell line which overexpresses the OCT6 protein;

b. a control antibody or compound which does not react with the OCT6 protein; and

c. a label.

9. The test kit of claim 8 wherein the label is selected from the group consisting of extrinsically activatable enzymes, prosthetic groups, fluorescent materials, luminescent materials, bioluminescent materials, radioactive materials, positron emitting metals using various positron emission tomographies, and nonradioactive paramagnetic metal ions, immunogenic tag peptide sequences, extrinsically activatable toxins, extrinsically activatable quenching agents, and antibodies.

10. An immunogenic composition comprising a substrate that binds selectively to an OCT6 transporter.

11. The immunogenic composition of claim 10 wherein the OCT6 transporter is encoded by the nucleotide sequence of SEQ ID NO:1.

12. The immunogenic composition of claim 10 further comprising a cytotoxic agent.

13. The immunogenic composition of claim 12 wherein the cytotoxic agent is coupled to the substrate.

14. The immunogenic composition of claim 13 wherein the cytotoxic agent is a chemotherapeutic agent.

15. The immunogenic composition of claim 10 further comprising an adjuvant.

16. An immunogenic composition comprising a compound that selectively binds to the epitope of the OCT6 protein encoded by the nucleotide sequence of SEQ ID NO:1.

17. The immunogenic composition of claim 16 wherein the compound is a cytotoxic agent.

18. The immunogenic composition of claim 17 wherein the compound is coupled to a cytotoxic agent.

19. The immunogenic composition of claim 17, wherein the cytotoxic agent comprises a chemotherapeutic agent.

20. The immunogenic composition of claim 16 further comprising an adjuvant.

21 A method of treating a hematological malignancy comprising, administering an OCT6 substrate which binds specifically or selectively to the OCT6 transporter protein.

22. The method of claim 21 wherein the OCT6 substrate is cytotoxic.

23. The method of claim 21 wherein the OCT6 substrate is coupled with a cytotoxic agent.

24. The method of claim 21 wherein the hematological malignancy is selected from the group consisting of Hodgkin's disease, leukemia such as, acute lymphoid (lymphocytic or lymphoblastic) leukemia (ALL), acute myeloid (myelogenous or myeloblastic) leukemia (AML), acute lymphoid leukemia, biphenotypic (ALL, biphentoypic), acute undifferentiated leukemia (AUL), chronic myeloid (myelogenous or granulocytic) leukemia (CML), erythroleukemia, granuloxytic leukemia, lymphoma,

monocytic leukemia, myleoma, myelomonocytic leukemia, myelodysplastic syndromes, non-Hodgkin lymphoma, and progranulocytic leukemia.

25. The method of claim 24 wherein the hematological malignancy is acute myeloid leukemia.

26. A method for the treatment of leukemia comprising administering to a subject in need thereof an effective amount of an immunogenic composition comprising a substrate that binds selectively to the OCT6 transporter gene.

27. The method of claim 26 wherein the substrate is cytotoxic to the cell.

28. The method of claim 27 wherein the substrate is chemically modified in the cell in a manner effective to prevent cellular efflux of the substrate.

29. The method of claim 28 wherein the chemical modification is phosphorylation, polyglutamylation or deamination.

30. The method of claim 27 wherein the substrate binds to an intracellular target in a manner effective to prevent cellular efflux of the substrate.

31. The method of claim 26 wherein the substrate is coupled to a cytotoxin.

32. The method of claim 31 wherein the cytotoxin is a chemotherapeutic agent.

33. The method of claim 26 wherein the OCT6 transporter gene has a nucleotide sequence of SEQ ID NO:1.

34. A method of impairing a leukemia blast cell which expresses an OCT6 transporter protein comprising, contacting said cell with a composition comprising a substrate that selectively binds to the OCT6 transporter gene.

35. The method of claim 34 wherein the substrate is an isolated amino acid encoding a nucleotide sequence that binds selectively to the OCT 6 transporter gene.

36. The method of claim 34 wherein the OCT6 transporter protein is encoded by the nucleotide sequence of SEQ ID NO:1.

37. The method of claim 34 wherein the substrate is recognized by the OCT6 transporter protein in an amount effective to cause cellular uptake of the substrate.

38. The method of claim 34 wherein the substrate is a cytotoxin.

39. The method of claim 34 wherein the substrate is coupled to a cytotoxin.

40. The method of claim 39 wherein the cytotoxin is a chemotherapeutic agent.